

REMARKS/ARGUMENTS

The amendments set out above and the following remarks are responsive to the points raised by the Office Action dated February 8, 2007. In view of the amendments set out above and the following remarks, reconsideration is respectfully requested.

The Pending Claims

Claims 9-12 have been added, so that claims 1-12 are currently pending. No new matter has been added, and the basis for the amended claim language may be found within the original specification, claims, and drawings. Claims 9-12 are supported at, for example, page 8, lines 17-25; page 10, lines 18-25; and page 15, lines 21-28 of the specification. Entry of the above is respectfully requested.

The Office Action

Claims 1-2 and 7-8 were rejected under 35 U.S.C. § 102 as anticipated by U.S. Patent No. 6,287,955 to Wang et al. (hereinafter, "Wang").

Claims 3-6 were rejected under 35 U.S.C. § 103 as unpatentable over Wang in view of U.S. Patent No. 5,792,680 to Sung et al. (hereinafter, "Sung").

Each of these rejections is separately and respectfully traversed.

With respect to the anticipation rejection of independent claims 1-2 and 7-8, the Office Action states that Wang discloses performing a lithographic exposure through a mask with the opening in the interlayer and the second film corresponding to the light shielding or light transmitting portion of the mask.

Anticipation requires that the cited reference disclose each and every element of the claim. The anticipation rejection of independent claims 1-2 and 7-8 cannot be maintained because the cited reference, Wang, does not teach each and every element of claims 1-2 and 7-8.

Each of independent claims 1-2 and 7-8 recites patterning said resist film *substantially in the same form as said opening* by exposing the resist with a photomask having a light-

shielding portion or a light-transmitting portion *substantially in the same form as the opening* in the interlayer film (emphasis added).

Wang does not teach patterning said resist film substantially in the same form as the opening by exposing the resist with a photomask having a light-shielding portion or a light-transmitting portion substantially in the same form as the opening in the interlayer film, as claimed. As shown in Figure 21 of Wang, an opening is formed in the organic low-k dielectric layer and in the inorganic low-k dielectric layer (col. 14, lines 2-10; Figure 21). As shown in Figure 23 of Wang, a resist is formed on the top of the metal level inorganic dielectric layer and the resist fills the vias in the metal level inorganic dielectric layer, the organic dielectric etchstop material layer and the thin inorganic dielectric layer (col. 14, lines 11-16; Figure 23). Then, as shown in Figure 24 of Wang, the photoresist is patterned through a trench mask, removing a portion of the photoresist from the top of the metal level inorganic dielectric layer, leaving other portions of the photoresist on the top of the metal level inorganic dielectric layer, and leaving a portion of the photoresist in the via (col. 14, lines 16-21; Figure 24).

Wang is silent as to the exact form of the mask. However, the portions of the photoresist remaining in Figure 24 correspond to the light-shielding portion or a light-transmitting portion of the mask used to pattern the resist. Besides the resist that remains in the via, other portions of the photoresist remain on the top of the metal level inorganic dielectric layer. These portions of the photoresist that remain on the top of the metal level inorganic dielectric layer reflect that the light-shielding or light-transmitting portion of the mask did not have a form substantially the same as the opening. Nowhere does Wang disclose a light-shielding or light-transmitting portion of a mask that has a form that is substantially the same as the opening, as claimed. Accordingly, Wang cannot anticipate the present claims.

The method for burying a resist of the present claims is patentably distinct from that of Wang for the reasons set forth above. The fact that Sung may teach a transparent portion of the mask for the positive resist or an opaque portion of the mask for the negative resist that may be smaller in dimension than the pattern formed in the photoresist is of no importance to

the patentability of the present claims. Sung does not cure the deficiencies of Wang, and therefore, the combination also fails to render the presently claimed invention obvious.

Since the independent claims are allowable for the reasons set forth above, the dependent claims are also allowable because they depend from patentable independent claims.

New dependent claims 9-12 are also allowable, not only because they depend from allowable independent claims, but also because they define limitations not taught by Wang or Sung.

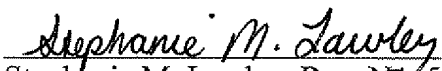
New dependent claims 9-12 recite that exposing the resist with a photomask having a light-shielding portion or a light-transmitting portion substantially in the same form as the opening and developing the resist *removes the resist other than the resist in the opening*. Wang does not disclose a method in which the resist is exposed with a photomask having a light-shielding portion or a light-transmitting portion that is substantially in the same form as the opening and developed to remove the resist other than the resist in the opening, as claimed. According to the method disclosed in Wang, exposure of the resist with a mask and development of the resist leaves portions of the resist other than the resist in the opening remaining on the top of the metal level inorganic dielectric layer (Figure 24). Accordingly, exposure of the resist with a mask and development of the resist in Wang does not remove the resist other than the resist in the opening, in direct contravention of dependent claims 9-12. Accordingly, dependent claims 9-12 are also patentable.

Conclusion

For the reasons set forth above, the pending claims are patentable over the cited references. Reconsideration of the rejections is respectfully requested.

If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,


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